

Irish IPv6 Summit

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IPv4 Depletion

- Quick Summary

- Prophets howling in the wilderness (since 1990s):
“the end of the Internet is neigh”
- In 2008 various predictions converge:
 - end 2010--start 2011 for IANA /8 block depletion; RIR depletion 12 months later; then impact on real assignments to end users
- Tony Hain, Cisco, Internet Protocol Jour. 8.3
- Geoff Huston, ARIN, <http://www.potaroo.net/>

IPv4 Depletion

- Quick Summary

- The Internet is broken
 - end-to-end architecture no longer available due to NAT and other middle boxes
- The Internet is running out of addresses
 - addresses needed for: more users, mergers and acquisitions, mobile Internet, Internet of Things sensors, security end points, ...
- IPv6 is the only fix available today

IPv6 End-to-End Vision

- Quick Summary

- Any device on the Internet is addressable by any other device on the Internet
- Anyone can offer a service to anyone without high overhead of negotiations with Operators, and costs associated with roll out to various markets
- In practice you need the bandwidth to support the usage of such services, problematic if they become popular quickly

TSSG, Waterford IoT

- Involved in IPv6 research since mid-1990s;
- Statistics: 160 staff/students; 40 active projects/year; €50M 1996-2009 income; 60 additional regional jobs in spin-outs/spin-ins;
- Leadership full lifecycle: (basic) HEA and SFI funding; (applied) leading Irish EU FP6 & FP7, top 10 in EU Future Internet; (commercial) leading Enterprise Ireland ICT.
- Unique basic & applied research & commercialisation

Irish IPv6 Task Force & Irish National IPv6 Centre

- Established Jan 2004 - EU IPv6 Launch Event (Brussels), Irish Presidency
- Built on TSSG activity in EU-funded IPv6 research programmes
- Supported by DCMNR (now DCENR) i.e. Department of Communications
- IPv6 Centre recognised (TSSG, HEAnet, Hamilton Institute, & BT Ireland)
 - EU Research and Development
 - Public Training/Teaching Materials
 - Irish IPv6 Summit event

Irish IPv6 Task Force

- Initial Members (Active):

ALTO, BT Ireland, CMOD-Dept. Finance, ComReg, DCENR, Forfás, IBEC, HEAnet, Hamilton Institute (NUIM), IEDR, TSSG (Waterford IT)

- Subsequent Members (Active):

Blacknight, Eircom, Google, HP, Shenick, Smart Telecom, TIF, UCD

Irish IPv6 Task Force

- Irish IPv6 TF has produced open source training material for use in IPv6 courses whether in Higher Education Institutions (e.g. degree level courses or Masters courses), or in specific training courses

<http://www.ipv6.ie/Documents.html>

- Provides a one stop shop for IPv6 information in Ireland by linking the national IPv6 expertise centrally

Call to Participate in Irish IPv6 Task Force

- The best way to deploy IPv6 is to share knowledge and expertise
- The best place to do this in Ireland is in the Irish IPv6 Task Force
- If you are interested, as an individual member or as a company, contact Mícheál Ó Foghlú
<http://www.tssg.org/people/mofoghlu>

Bibliography

- RIPE Community Resolution on IPv4 Depletion and Deployment of IPv6 (Amsterdam, 26 October 2007)

<http://www.ripe.net/news/community-statement.html>

During the RIPE 55 meeting in Amsterdam, the RIPE community agreed to issue the following statement on IPv4 depletion and the deployment of IPv6.

"Growth and innovation on the Internet depends on the continued availability of IP address space. The remaining pool of unallocated IPv4 address space is likely to be fully allocated within two to four years. IPv6 provides the necessary address space for future growth. We therefore need to facilitate the wider deployment of IPv6 addresses.

While the existing IPv4 Internet will continue to function as it currently does, the deployment of IPv6 is necessary for the development of future IP networks. The RIPE community has well-established, open and widely supported mechanisms for Internet resource management. The RIPE community is confident that its Policy Development Process meets and will continue to meet the needs of all Internet stakeholders through the period of IPv4 exhaustion and IPv6 deployment.

We recommend that service providers make their services available over IPv6. We urge those who will need significant new address resources to deploy IPv6. We encourage governments to play their part in the deployment of IPv6 and in particular to ensure that all citizens will be able to participate in the future information society. We urge that the widespread deployment of IPv6 be made a high priority by all stakeholders."

- [IPv6 Forum] IPv6 Forum Portal, <http://www.ipv6forum.com/>
- [EU IPv6 TF] EU IPv6 Task Force Portal, <http://www.ipv6tf.eu/>
- [ICANN IPv6] IPv6 Fact Sheet, October 2007, <http://www.icann.org/announcements/factsheet-ipv6-26oct07.pdf>
- [Hain 2004] A Pragmatic Report on IPv4 Address Space Consumption, T. Hain, September 2005. http://www.cisco.com/web/about/ac123/ac147/archived_issues/ipj_8-3/ipv4.html
- [Huston 2008a] The IPv4 Internet Report, G. Huston, August 2008. <http://ipv4.potaroo.net>
- [Huston 2008b] The Changing Foundation of the Internet: Confronting IPv4 Address Exhaustion, G. Huston, September 2008. <http://www.potaroo.net/ispcol/2008-10/v4depletion.html>
- [Ó Foghlú 2008] CAIDA IPv6 Topology Maps, February 2008 http://www.ofoghlú.net/log/2008/02/caida_ipv6_topology_maps.html